

IUPUI Research Day 2014

Research and Creative Activity Matter: From IUPUI to the World

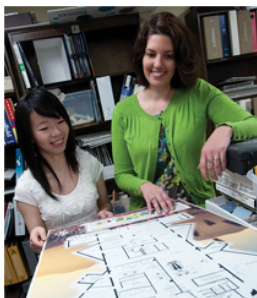
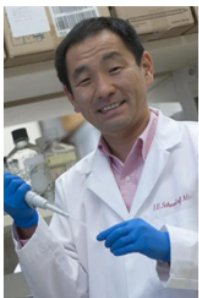
April 11, 2014
IUPUI Campus Center
9:30 AM – 3:00 PM

Research Frontiers Distinguished Lecture:



Featuring:
Richard Blanco

Acclaimed Presidential Inaugural Poet and Practicing Engineer
Born in Madrid and raised in Miami, Blanco earned a B.S. in civil engineering and an M.F.A. in creative writing from Florida International University. A practicing engineer and writer, Blanco has taught at Georgetown University and American University, among other institutions. His books, in order of publication, are: *City of a Hundred Fires* (1998), *Directions to the Beach of the Dead* (2005), *Looking for the Gulf Motel* (2012), *One Today* (2013), *Boston Strong* (2013), and *For All of Us, One Today: An Inaugural Poet's Journey* (2013). Blanco served as the fifth inaugural poet of the United States, performing the original poem "One Today."




IUPUI
OFFICE OF THE
VICE CHANCELLOR
FOR RESEARCH
INDIANA UNIVERSITY-PURDUE UNIVERSITY
INDIANAPOLIS
research.iupui.edu



Welcome

Dear Colleagues,

I would like to extend a personal welcome to each of you who are joining us at the 2014 IUPUI Research Day, on April 11th. Our theme this year is Research and Creative Activity Matter: From IUPUI to the World. Held at the Campus Center, this daylong celebration of IUPUI research and creative activity begins with a morning plenary session from 9:30 am to 11:00 am in the lower level theatre. This session starts with the announcement of the 2014 Research Frontiers Trailblazer Award recipients, who will make short presentations, followed by a student presentation, and the keynote presentation by Mr. Richard Blanco, President Obama's 2013 Inaugural Poet. Mr. Blanco is internationally known as a poet, author, and civil engineer. He travels the world, inviting audiences to reconnect to the heart of the human experience and all of its beautiful diversity.

Research Day events also include two poster sessions, showcasing the innovative research of our faculty, staff, and graduate, professional and undergraduate students. New this year is "JagTalks", a series of short but dynamic presentations that illuminate the breadth of research and creative activity happening at IUPUI and beyond. Jag Talks is open to all Research Day attendees.

Research Day is a great way for IUPUI faculty, staff, and students, and their academic, industrial, governmental partners, along with the broader community, to learn more about the research enterprise at IUPUI, explore new collaborations, and lay the foundation for new partnerships. This is truly an exciting time for research at IUPUI.

Sincerely,

Kody Varahramyan
Vice Chancellor for Research



Kody Varahramyan
Vice Chancellor for Research

IUPUI Research Day 2014

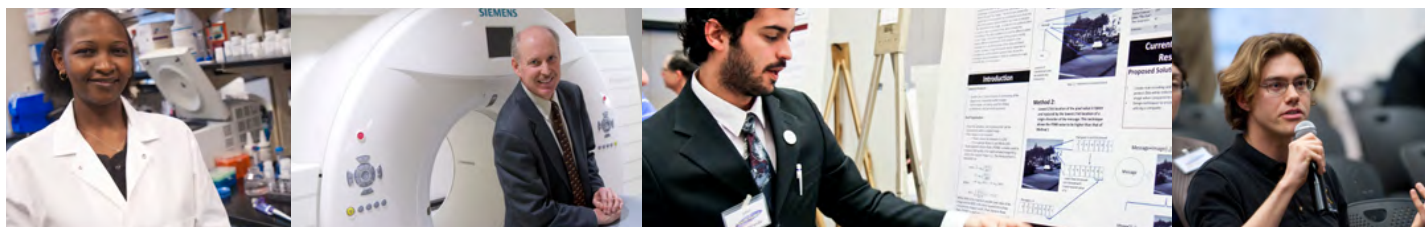
Program at a Glance

IUPUI Campus Center Theater

9:30 am - 9:35 am	Opening Remarks and Welcome – Theater Lower Level
9:35 am - 9:40 am	Announcement of 2014 Trailblazer Award Winners
9:40 am - 10:10 am	Presentations by the 2014 Trailblazer Award Winners
10:10 am - 10:20 am	Student Speaker Presentation: Kendrea Joy Williams
10:20 am - 11:00 am	Keynote Presentation by Mr. Richard Blanco "Becoming American: An Inaugural Poet's Journey"

IUPUI Campus Center 4th Floor

11:00 am - 11:10 am	Move to Poster Session I - Room 450 A, B, C
11:10 am - 12:40 pm	Poster Session I
12:40 pm - 1:10 pm	Switch to Poster Session II / Break
1:00 pm - 2:30 pm	"Jag Talks" Research and Creative Activity Presentations – Room 405 (See inside back cover for speaker information.)
1:10 pm - 2:40 pm	Poster Session II - Room 450 A, B, C



**Faculty and Student Research
Posters and Exhibits – Session I
11:10 am – 12:40 pm**

ARTS AND HUMANITIES

- 1. Intersections: An Installation/Sculpture**
Anila Quayyum Agha
Herron School of Art & Design
- 2. Optics and Visio Dei: Interpretations of Female Mystic Art**
Tory L. Schendel
Herron School of Art and Design
Mentor: Jennifer Lee, Herron School of Art and Design
- 3. Nature in 19th Century German Literature**
Chad L. Jones
Liberal Arts
Mentor: Thorsten Carstensen, Liberal Arts
- 4. The New Oxford Shakespeare Project at IUPUI**
Gary Taylor, Terri Bourus
Florida State University, Liberal Arts,
Oxford University
- 5. Memory and Identity on Display in a “Family Museum”: A Video Poster**
Elizabeth Wood, Erik Peterson
Liberal Arts
- 6. The Genetic Portrait Project**
Stefan Petranek
Herron School of Art and Design
- 7. Arabophobia and Arab-Conscious Hip-Hop**
Ryan Arron
Liberal Arts
Mentor: Jonathan Rossing, Liberal Arts

- 8. Ignorance is not Innocence: The Social Health Association of Indiana and Adolescent Sex Education, 1907-2007**
Angela Bowen Potter, Philip V. Scarpino
Liberal Arts
Mentors: Philip V. Scarpino, School of Liberal Arts; Michael Howe, Social Health Association of Indiana
- 9. Participatory Innovation: A Pedagogical Approach to Help Students Reveal Real-World Problems**
Aaron Ganci
Herron School of Art and Design
- 10. Multidisciplinary Viewpoints on Global River Systems**
Jeremy Maxwell, Andrew Townsend
Liberal Arts
Mentor: Jason Kelly, Liberal Arts

PUBLIC AND ENVIRONMENTAL AFFAIRS

- 11. Price Ceiling: The Charitable Status of Fee-Charging Nonprofits**
Robert Katz
Robert H. McKinney School of Law, Lilly Family School of Philanthropy
- 12. Fostering Public Service by Linking Benefits to Community, Campus, and Students: A Case Study**
Laura Littlepage
Public and Environmental Affairs
- 13. Campus Kitchen Project at IUPUI**
Daniel W. Remington, Nancy Barton
Public and Environmental Affairs, Physical Education and Tourism Management
Mentor: Deborah Ferguson, IUPUI Office of Sustainability

EDUCATION, SOCIAL AND BEHAVIORAL SCIENCES

14. **The Interactive Effects of Alcohol Cravings, Cue Reactivity, and Urgency on College Student Problematic Drinking**
Kenny A. Karyadi, Melissa A. Cyders
Science
15. **The Effect of Alcohol Consumption History on Sensitivity and Acute Functional Tolerance to the Ataxic Effects of Alcohol in C57BL/6J Mice**
William R. Fetzner, Brandon M. Fritz, Stephen L. Boehm II
Science
Mentors: Stephen L. Boehm II, Brandon M. Fritz, Science
16. **Staff Morale at Four County Counseling Center (4CCC) in Logansport, Indiana**
Alicia M. Quash, Ruthie Firmin, Michelle P. Salyers
Science
Mentors: Michelle Salyers, Ruth Firmin, Science
17. **Transforming Synergy Care Delivery Model into an Effective Nursing Shift Report Tool**
Karen Denise Kerley, Mikyoung Lee
Nursing
Mentor: Mikyoung Lee, Nursing
18. **Benefits of Integrated Care in Mental Illness Management**
Kyle L. Benbow, Kelsey Bonfils, Michelle Salyers
Science
Mentors: Michelle Salyers, Kelsey Bonfils, Science
19. **Introducing Biology Undergraduates to Authentic Research through Grand Challenges in Global Health: Examining Environmental Factors that Influence the Development of Zebrafish Embryos**
Swapnalee Sarmah, Grady Chism, Martin Vaughan, James A. Marrs, Kathleen A. Marrs
Science
Advisors: James A. Marrs, Kathleen A. Marrs, Science
20. **Teacher Evaluation in the State of Indiana: Alignment Efforts in University Based Teacher Instruction**
Caris Bianne Daily, Rose Jackson, Charlie Feldhaus, John Buckwalter
Education, STEM Education Research Institute (SERI), Engineering and Technology
21. **Determining Evidence Based Properties of M.O.P. Civic Education School Discipline Program**
Carolyn Gentle-Genitty, Isaac Karikari, Christy Gauss, Tracy Cudjoe, Susan Nichter
Social Work
22. **From Course “Management” to Course “Networking” - IUPUI CyberLab Engages Students in Developing CourseNetworking (thecn.com) for the World**
IUPUI CyberLab
Engineering and Technology
23. **Toward a Relevant Policy Studies and Civics Coursework for Grades 9-12**
Troy Crayton, Cathy Bhatena
Education
Mentor: Brendan Maxcy, Education
24. **Evaluating the Impact of Community Engagement: The JPMorgan Chase Foundation - IUPUI Near Eastside Legacy Initiative**
Silvia Garcia, Teresa Bennett, Christine Fitzpatrick
IUPUI Solution Center

- 25. Author's Rights to Share Scholarship: A Survey of IUPUI Faculty Attitudes**
Jere Odell, Emily Dill, Kristi Palmer
IUPUI University Library, University Library
IUPUC
- 26. Idea Density Correlates with Prior Knowledge**
Chanel Johnson
Engineering and Technology
Mentor: Jomo Mutegi, Education
- 27. Employment and Marriage Market Tradeoffs in an LGB Sample**
Doug Ziebarth, Peggy Stockdale, Megan Redhead, Milena Petrovic
Science
Mentors: Peggy Stockdale, Milena Petrovic, Science

BUSINESS

- 28. Audemes: Exploring the Market Potential of a Sound Based Educational Tool**
Christopher Meyer, Sheheryar Ahsan, Vinayak Gupta, Abigail Parham, Harsh Patel, Mariam Qureshi
Public and Environmental Affairs, Informatics and Computing, Science, Kelly School of Business
Mentor: Karen F. White, Office of the Vice Chancellor for Research
- 29. Is China Reshaping the African Landscape?**
Gabrielle Rayner, Darrell E. Brown
Kelley School of Business
Mentor: Darrell E. Brown, Kelley School of Business
- 30. An Analysis of Financial Performance Indicators based on Three Types of Water Utility Ownership in the State of Indiana**
Matt Nafziger, Dan Koo
Engineering and Technology

SIGNATURE CENTER INITIATIVE

- 31. IUPUI Center for Cancer Population Analytics and Patient-Centered Informatics**
David A. Haggstrom, Josette Jones, Layla Baker
Roudebush VAMC, Medicine, Regenstrief Institute, Informatics and Computing
- 32. Pancreatic Cancer Signature Center: Providing the Research Tools Necessary to Advance Pancreatic Cancer Patient Care**
Murray Korc, Crystal Munson, Mark R. Kelley
Medicine
- 33. Center for Urban Health: Enhancing the Health of Cities by Focusing on Communities and the Environment**
Gabriel Filippelli, Daniel Johnson, Sarah Wiehe, Dennis Watson
Science, Liberal Arts, Medicine, Richard M. Fairbanks School of Public Health
- 34. Airway Dimensions and Pathologies of Trumpet Players vs. Non-Trumpet Players**
KS Kula, A Imburgia, S Halum, M Van Dis, AA Ghoneima
Dentistry, Medicine
- 35. We All Have To Do It: Purpose and Process of Literature Review**
Deborah Lafata, Anne Weiss, Rachel Thelin, Sheila Suess Kennedy
IU Center for Civic Literacy, School of Public and Environmental Affairs

TECHNOLOGY, INFORMATICS AND ENGINEERING

- 36. Control of a Hydraulic Wind Power Transfer System under Wind Disturbance**
 Masoud Vaezi, Afshin Izadian
 Engineering and Technology
 Mentor: Afshin Izadian, Engineering and Technology
- 37. Design of Optical Diagnostic System for Wave Rotor Constant Volume Combustor**
 Fatin Baharuddin, Zhen Wei Yong, Kok Hwang Chow
 Engineering and Technology
 Mentors: Mani Rajagopal, Razi Nalim, Engineering and Technology
- 38. Design and Configuration of a 5 hp Microprocessor Controller Inverter**
 Ndeye Bitylokho Seck
 Engineering and Technology
 Mentor: Afshin Izadian, Engineering and Technology
- 39. Enabling National Instruments to Drive Power Electronics Circuits**
 Michael Coopridge, James Ratliff, Afshin Izadian
 Engineering and Technology
 Mentor: Afshin Izadian, Engineering and Technology
- 40. Advanced Dynamic Vehicle Simulation**
 Pete Hylton, David Russomanno, Christopher Lawrence
 Engineering and Technology
- 41. Improving Safety Structures on Sprint and Midget Race Cars**
 Grant Hankins, Kenny Krajnik, Brad Galedrige, Shahab Sakha, Pete Hylton, Wendy Otoupal
 Engineering and Technology
- 42. Topology Optimization and 3D Printing of a Lightweight Protective Robotic Vehicle Structure**
 Kerri A. Charlton, Clayton Kello
 Engineering and Technology
 Mentor: Andres Tovar, Engineering and Technology
- 43. Design of Radio Communication Control System for Robotic Applications**
 Tim Allen
 Engineering and Technology
 Mentor: Andres Tovar, Engineering and Technology
- 44. The Internet Based Electronic Voting Enabling Open and Fair Election**
 Xukai Zou, Huian Li, Yan Sui, Wei Peng, Feng Li
 Science, Engineering and Technology, UITS
- 45. Revocable, Interoperable and User-Centric (Active) Authentication Across Cyberspace**
 Yan Sui, Xukai Zou, Eliza Y. Du, Feng Li
 Science, Engineering and Technology, Qualcomm
- 46. Navigating the Aural Web: Augmenting the User Experience for Visually Impaired and Mobile Users**
 Davide Bolchini, Prathik Gadde, Corey Johnson, Jennifer George-Palilonis, Romisa Rohani Ghahari
 Informatics and Computing
- 47. Using Course Networking to Teach English Globally**
 Jennifer Hashem
 Liberal Arts
 Mentor: Mengyuan (Alice) Zhao, Engineering and Technology; Sarah Zike, CourseNetworking, LLC

- 48. Effects of Coating on Die Components During Aluminum Extrusion Process**
Tushar Bakhtiani, Jing Zhang, Hazim El-Mounayri
Engineering and Technology
Mentors: Jing Zhang, Hazim El-Mounayri, Engineering and Technology
- 49. Self-Healing Corrosion Resistant Coatings**
Alan Jones, Lujie Ye
Engineering and Technology
Advisor: Alan Jones, Engineering and Technology
- 50. Development of a Microfluidic Gas Generator From an Efficient Film-Based Microfabrication Method**
Y. Cao, M. R. Zamani Farahani, J. Bontrager-Singer, L. Zhu
Engineering and Technology
Mentor: Likun Zhu, Engineering and Technology
- 51. Study on the Structural, Thermal and Mechanical Properties of LiCoO₂ Using First Principles Method**
Linmin Wu, Jing Zhang
Engineering and Technology
Mentor: Jing Zhang, Engineering and Technology
- 52. Phase Transition and Thermodynamic Properties Study of Zirconia Using First Principles Method**
Yi Zhang, Jing Zhang
Engineering and Technology
Mentor: Jing Zhang, Engineering and Technology
- 53. Energy Return of Different Designs of Track Spikes**
Rafael Bahamonde, Jefferson Streepey, Lance Goyke, Adrian Myers, Alan Mikesky
Physical Education and Tourism Management, Center for Physical Activity in Wellness and Prevention, Purdue University
Mentors: Alan Mikesky, Rafael Bahamonde, Jefferson Streepey, Physical Education and Tourism Management
- 54. Nanotechnology Research, Education, and Outreach by the Integrated Nanosystems Development Institute (INDI)**
Mangilal Agarwal, Maher Rizkalla, Christoph Naumann, Ricardo Decca, Hazim El-Mounayri, Frank Witzmann
Engineering and Technology, Science, Medicine
- 55. Simulation of Heat Generation in a Reconstructed LiCoO₂ Cathode during Galvanostatic Discharge**
Bo Yan, Zhibin Song, Cheolwoong Lim, Likun Zhu
Engineering and Technology
Mentor: Likun Zhu, Engineering and Technology
- 56. Advanced Materials for Rechargeable Lithium-Sulfur Batteries**
Yongzhu Fu
Engineering and Technology
- 57. Paper-Based Flexible Lithium-Ion Batteries**
Nojan Aliahamd, Sudhir Shrestha, Mangilal Agarwal, Kody Varahramyan
Integrated Nanosystems Development Institute, Engineering and Technology
Mentors: Sudhir Shrestha, Mangilal Agarwal, Kody Varahramyan, Engineering and Technology

58. Beyond Lithium Ion: Lithium Metal Batteries with High Specific Energy and Long Cycle Life

Jian Xie

Engineering and Technology

59. Combined Generation and Optimization of a Wind-Solar-Battery Power System

Dan Shen, Afshin Izadian

Engineering and Technology

Advisor: Afshin Izadian, Engineering and Technology

60. Chemical and Phase Transformation From Vanadium Sulfide to Oxide Via a New Chemical Route for the Synthesis of β' -Li_xV₂O₅ as a High Performance Cathode

Wen Chao Lee, Nina Mahootcheian Asl,

Youngsik Kim, Likun Zhu

Engineering and Technology

Mentor: Likun Zhu, Engineering and Technology

61. Geometric Characteristics of 3D Reconstructed Anode Electrodes of Lithium Ion Batteries

Cheolwoong Lim, Bo Yan, Leilei Yin, Likun Zhu

Engineering and Technology, Shanghai

JiaoTong University China, University of Illinois

Mentor: Likun Zhu, Engineering and Technology

62. Drug Discovery Through Drug Perturbation Pathway Modeling and Network Analysis

Tung Ho, Krista Hakola, Pragat Wagle, Evan Rouse, Mehdi Shadmand, Juyeon Han, Sara Ibrahim

Science, Engineering and Technology, Butler University

Mentors: Jake Chen, Xiaogang Wu, Informatics and Computing

63. When Your Boss Supports You During Your Internship: The Impact Co-op Supervisor Support on Engineering Students' Attitudes and Career Outlook

Toby Egan, Lila Carden, Tomika Greer

Engineering and Technology, University of Houston

PHYSICAL SCIENCES

64. Exploring the Roots of a Massive Volcanic Eruption - Geochemical Comparison of Intrusive Rocks and Overlying Volcanic Rocks

Joseph Robert

Science

Mentor: Andy Barth, Science

65. Anthropogenic Transformation at Angel Mounds: Construction, Chronology and Context for Mounds A and F

Jeremy J. Wilson, G. William Monaghan

Liberal Arts; Arts and Sciences, IUB

66. Solvent Azeotropes in Art Conservation

Megan Carrison, John Goodpaster, Gregory Dale Smith

Science, Indianapolis Museum of Art

Mentor: John Goodpaster, Science

67. ¹H NMR of Deep Eutectic Solvents

J. Lincoln Wallis, Liel Sapir, Daniel Harries, Horia I. Petrache, Bruce D. Ray

Science, Hebrew University, Israel

Mentors: Horia I. Petrache, Bruce Ray, Science

68. Elimination of TFA-Mediated Cleavage in Distributed Drug Discovery

Jon Carnahan, William Scott, J. Geno Samaritoni, Martin O'Donnell

Science

Mentors: Martin O'Donnell, William Scott, Science

69. Finding Active Ingredients in Pharmaceuticals by UV Spectrophotometry

Gabriela Figueroa, Luis A. Palacio, Bruce D. Ray, Horia I. Petrache, Alfredo Lopez-Yunez
Science, Health and Science Innovations, Inc., Alivio Medical Center
Mentor: Luis A. Palacio, Health and Science Innovations, Inc.
Advisors: Alfredo Lopez-Yunez, Alivio Medical Center; Bruce D. Ray, Horia I. Petrache, Science

70. Fluorescence Measurements of Aromatic Amino Acids in the Presence of Lipid Membranes

Sirine Khelifi, Merrell A. Johnson, Bruce D. Ray, Horia I. Petrache
Science
Mentors: Merrell A. Johnson, Bruce D. Ray, Horia I. Petrache, Science

71. Using Mathematics to Investigate Integrin Activation in Inhibited Cell Migration

Lauren Lembcke, Amin Afrazi, David Hackam, Julia Arciero
Science, University of Pittsburgh
Advisor: Julia Arciero, Science

72. Investigating the Effects of Size and Shape of Anisotropic Nanostructures on the Molecular Sensor Response

Sandra Ekoma, Gayatri K. Joshi, Rajesh Sardar
Science
Mentor: Rajesh Sardar, Science

LIFE AND HEALTH SCIENCES

73. Supporting Healthy Lifestyles of Liver Transplant Candidates and Recipients

Jessie Halle, Katelyn LeMond, Irene Robinson, Rebecca Sloss
Health and Rehabilitation Sciences
Advisors: Patricia Scott, Emily Winslow, Health and Rehabilitation Sciences

74. Examining Influential Factors in Providers' Chronic Pain Treatment Decisions: A Comparison of Physicians and Medical Students

Charnelle A. Free, Nicole A. Hollingshead, Samantha Meints, Stephanie Middleton, Adam T. Hirsh
Science
Mentor: Adam T. Hirsh, Science

75. Primary Care Patients who Complete Colonoscopy after Referral and Those Who Do Not: Are they Different?

Kemi Olofinkua, Susan Rawl, Barbara Habermann, Shannon Christy, Susan Perkins, Yan Tong, Netsanet Gebregziabher, Michelle Mabis, Connie Krier, Amit Mirchandani, Hala Fatima
Nursing, University of Delaware, Purdue University, Simon Cancer Center
Mentor: Susan Rawl, Nursing

76. Skills Included in Self-Management Interventions to Help People with Chronic Kidney Disease

Debbie E. Drenzyk, Marcy R. Gardner, Janet L. Welch
Nursing
Mentor: Janet L. Welch, Nursing

77. Secretory Activity of Human Cyst Fluid Isolated From Polycystic Kidney Disease Patients

Gabriel M. Martinez, Bonnie L. Blazer-Yost
Science
Mentor: Bonnie L. Blazer-Yost, Science

78. Effects of Thrombopoietin (TPO) on Longitudinal Mouse Hind Limb Crush Injury Model

Greg Rothchild, Kelsey Lipking, Todd McKinley, Melissa A. Kacena, George E. Sandusky
Medicine
Mentor: George E. Sandusky, Medicine

- 79. Application of Salubrinal for Bone Fracture Healing**
Hiroki Yokota, Chien-Chi Lin
Engineering and Technology
- 80. A Three-Dimensional Analysis of Maxillary Sinus Congestion in Unilateral Cleft Lip and Palate**
Lindsay Hale, John Starbuck, Ahmed Ghoneima, Katherine Kula
Dentistry, Science
Mentors: Katherine Kula, John Starbuck, Dentistry
- 81. Cutaneous Silent Period Characteristics are Dependent on the Organization of Upper Limb Muscles**
Nathan R. Eckert, Anthony W. Meek, Krista Smith, Jason C. Williams, Zachary A. Riley
Physical Education and Tourism Management, Public Health
Mentor: Zachary A. Riley, Physical Education and Tourism Management
- 82. Initial KAATSU Cuff Tightness: Effect of Limb Anthropometrics on Blood Flow Restriction**
Adam Heavrin, Anthony Meek, Neil A Segal, Alan E Mikesky
Physical Education and Tourism Management, University of Iowa
Mentor: Alan E Mikesky, Physical Education and Tourism Management
- 83. KAATSU Cuff Tightness and Limb Anthropometry: Effect on Blood Flow Restriction**
Anthony Meek, Adam Heavrin, Neil A Segal, Alan E Mikesky
Physical Education and Tourism Management, University of Iowa
Mentor: Alan E Mikesky, Physical Education and Tourism Management
- 84. Structure and Mechanics of Mammalian Prehensile Tail Vertebrae**
Jeffery Joll, Joseph E. Rupert, Jeremy Mihajlovich, Jason M. Organ
Engineering and Technology, Medicine
Mentor: Jason Organ, Medicine
- 85. Defining the Roles of Various Lysines and Arginines in Amot Lipid Binding**
L'eCelia Hall, Ann Kimble-Hill, Clark D. Wells, Thomas Hurley
Medicine
Mentor: Ann Kimble-Hill, Medicine
- 86. Core Body Temperature Regulation and Locomotor Activity**
Yeonjoo Yoo, Maire Kelley, Dmitry Zaretsky, Yaroslav Molkov
Science, University of St. Thomas, Houston, Medicine
Mentor: Yaroslav Molkov, Science
- 87. Effects of Aerobic Exercise Training on Diaphragm Muscle Metabolism in a Rat Model of Pulmonary Arterial Hypertension**
Angela D. Pittman, Mary Beth Brown
Health and Rehabilitation Sciences
Mentor: Mary Beth Brown, Health and Rehabilitation Sciences
- 88. Hemodynamic Responses to Acute Exercise and L-Arginine Recorded in Real-time via Implantable Telemetry in a Rat Model of Pulmonary Arterial Hypertension**
Abigail Zinn, Amanda Fisher, Robert Presson, Dmitry Zaretsky, Dan Rusyniak, Mary Beth Brown
Health and Rehabilitation Sciences, Medicine
Mentor: Mary Beth Brown, Health and Rehabilitation Sciences

- 89. Mechanism by Which TRPV1 Activation Modulates Coronary Vascular Tone**
S. Christopher Hiatt, Sarah Flores,
Meredith K. Owen, Wennan Li, Xingjuan
Chen, Johnathan D. Tune, Alexander G.
Obukhov
Medicine
Mentor: Alexander G. Obukhov, Medicine
- 90. Role of Transforming Growth Factor *Beta2* in Congenital Heart Disease**
Gracelyn Bose, Abu Ahmed, Li Huang, Kirti
Sarangdhar, Mohamad Azhar
Medicine
Mentor: Mohamad Azhar, Medicine
- 91. HIV-Patient Survival as a Function of Neurocognitive Impairment (NCI) History**
Maria Kudela, Jaroslaw Harezlak,
Constantin T. Yiannoutsos
Richard M. Fairbanks School of Public
Health, Medicine
Mentors: Jaroslaw Harezlak, Constantin T.
Yiannoutsos, Richard M. Fairbanks School
of Public Health, Medicine
- 92. Evaluating Differences in Cognitive Function after N-Acetyl-Cysteine Treatment in a Two-Hit Rat Model of Schizophrenia**
Nadalie K.J. Cayetano, Sarine S. Janetsian,
Christopher C. Lapish
Science, Medicine
Mentors: Christopher C. Lapish, Sarine S.
Janetsian, Science
- 93. Cortex – Basal Ganglia Synchronization in Parkinson’s Disease**
S. Elizabeth Zaubler, Sungwoo Ahn, Robert
M. Worth, Thomas C Witt, Leonid L.
Rubchinsky
Medicine, Science
- 94. Fine Temporal Structure of Neural Synchronization**
Sungwoo Ahn, Leonid L. Rubchinsky
Science, Medicine
- 95. Effects of Epigallocatechin-3-gallate Treatment on Cognitive Deficits in a Down Syndrome Mouse Model**
Hardeep Dhillon, Irushi S Abeysekera,
Megan Stringer
Science
Mentors: Randall J Roper, Charles
Goodlett, Science
- 96. Rescue of Adult Neurogenesis in Down Syndrome Mouse Model**
Josh East
Science
Mentor: Charles Goodlett, Science
- 97. EGCG From Different Sources: Differential Stability and Effects on Treating Bone Phenotypes Related to Down Syndrome**
Jared R. Thomas, Irushi S. Abeysekera,
Joshua D. Blazek, Randall J. Roper
Ivy Tech Community College- Central
Indiana, Science
Mentor: Randall J. Roper, Science
- 98. Correction of Craniofacial Deficits using Epigallocatechin-3'-gallate Treatment in a Down Syndrome Mouse Model**
Danika M. Tumbleson, Emily M. Haley,
Mariyamou Diallo, Samantha L. Deitz,
Randall J. Roper
Science
Mentor: Randall J. Roper, Science
- 99. EGCG Treatment on Ts65Dn Mice Suggests a Possible Correlation in the Cognitive Development of Mice**
Maria Fatima Delgado Taboada, Irushi
Abeysekera, Randall J. Roper
Science
Mentor: Randall J. Roper, Science

100. Analytical Comparison of the Effectiveness of the Diabetes Prevention Program and Weight Watchers as Media to Prevent Type II Diabetes via Weight Loss in Different Age Categories

Abdul Karim Khan, Kelly Nicole Brunson Palmer, David G. Marrero

Science, Medicine

Mentors: Kelly Palmer, Medicine; Vicki Bonds, Center for Research and Learning; Simon Atkinson, Science; David Marrero, Medicine

101. Sensitivity and Specificity of the Hemoglobin A1c Test in Predicting Type 2 Diabetes in Youth

Melissa Gronceski, Tamara Hannon

Medicine

Mentor: Tamara Hannon, Medicine

102. Do Obese Adolescents With Dysglycemia Have Impaired Sleep?

Sara Watson, Hasnaa Jalou, Sangeeta Chakroverty, Tamara Hannon
Medicine, University of Pittsburgh Medical Center, IUPUI Center for Pediatric Obesity and Diabetes Prevention Research
Advisor: Tamara Hannon, Medicine

103. Fostering Awareness of the Community by Engaging Students (FACES)

Lisa Robison, Jason Stegink, Bryce Buente, Sherri Ying-Hsuan, Abby Church
Richard M. Fairbanks School of Public Health, Medicine

Mentors: Margaret Gaffney, Medicine; Dennis Watson, Gregory Wilson, Richard M. Fairbanks School of Public Health

104. Condom Use as a Function of New Young Adult Relationship Duration

Harezlak J, He F, Hensel D, Fortenberry JD
Fairbanks School of Public Health, Medicine

105. The Use of Simulation in Pre-doctoral Medical Emergencies Training

Derek Vajda, Jeffrey Bennett, Laura Romito

Dentistry

Mentors: Jeffrey Bennett, Laura Romito, Dentistry

106. Sterility of Intravenous Catheterization Tubing: Is it Safe to Remove the Sterile Cap for an Extended Period of Time?

Paige Nilles

Medicine

Mentor: Cybil Nielsen, Medicine

107. Platelet-Activating Factor-Receptor Agonists Generated By Chemotherapy Thwart Host Anti-Tumor Immunity

Ravi P. Sahu, Jesus A. Ocana, Matheus Ferracini, Christopher E. Touloukian, Raymond L. Konger, Jeffrey B. Travers
Medicine, Richard L. Roudebush V.A. Medical Center

108. Preclinical Characterization of Drug Like Glucocorticoid Induced Leucine Zipper Peptide Analogs

Srinivasan M, Blackburn C, Lahiri DK
Dentistry, Medicine

109. Activation of Dendritic Cells by Soy peptide Lunasin: Implication in Vaccine Adjuvant

Sarah Flores, Melissa Dong, Chun-Yu Tung, Hua-Chen Chang
Science

Mentors: Chun- Yu Tung, Hua-Chen Chang, Science

110. Activation of Natural Killer Cell by Lunasin and Cytokine

Sharifah Kyazike, David Lewis, Chun-Yu Tung, Ling Han, Hua-Chen Chang
Science

Mentors: Hua-Chen Chang, Chun-Yu Tang, Science

111. Gigaxonin Regulates Intermediate Filament Structure by Modulating the Ras Pathway Through the Degradation of Galectin-1

Kyle B. Martin, Samuel M. Beard, Kelsey S. Loden, R. Mark Payne
Medicine, Valparaiso University
Advisor: R. Mark Payne, Medicine

112. Touching an Aseptic Injection Site Prior to Intravenous Administration: Can Microorganisms be Introduced to the Aseptic Area?

Tina L. Ruth
Medicine
Mentors: Jack Samaritoni, Science; Cybil Nielsen, Medicine

113. Exploring Biological Property of a New Neonatal Pulp Cells

Connor Love, Zheng Huang, Fengyu Song
Science, Dentistry
Mentor: Fengyu Song, Dentistry

114. Imprinting Status Examination of the PLAGL1 Locus on Human Chromosome 6 Expressed in the Placenta

Anna Brenneman
Science
Mentor: Jill Reiter, Medicine

115. Expand Your Research: Next-Gen Sequencing, Genotyping, Gene Expression, and Epigenetics at the Center for Medical Genomics at IUSM

Xiaoling Xuei, Jeanette McClintick, Yunlong Liu, Howard J. Edenberg
Medicine

116. Population Genetics of the blow fly *Phormia regina* (Meigen)

John W. Whale, Christine J. Picard
Science

117. *De Novo* Genome Assembly of *Phormia regina* (Diptera: Calliphoridae)

Anne A. Andere, Christine J. Picard
Science
Mentor: Christine J. Picard, Science

118. Assessing the Depiction of Electronic Cigarettes in YouTube Videos

R. Hurwich, L. Romito
Dentistry
Mentor: Laura Romito, Dentistry

119. Validation of a Novel Neuroimaging Task to Assess Anger Inducing Situations in Youth at Low Risk for Substance Abuse

Brandon Ball, Vicky Gichina, Liliana Patino, Leslie Hulvershorn, Tom Hummer
Medicine
Mentors: Leslie Hulvershorn, Tom Hummer, Medicine

120. Assessing the Potential for Urban Produce Gardening on Vacant Land

Gloria Ekissi, Christina Mushi-Brunt
Health and Rehabilitation Sciences
Mentor: Christina Mushi-Brunt. Health and Rehabilitation Sciences

IMAGING

121. IUPUI Imaging Research Initiative

Mark Holland
Medicine

122. IUPUI Imaging Research Initiative: Research Center for Quantitative Renal Imaging

Mark Holland
Medicine

123. Use of Aperio Whole Slide Imaging System to Capture and Utilize Digital Virtual Slides for Pathology Education

Samuel Capouch, Kelsey Lipking, Ronne Leigh Surface, Randy Morgan, George Sandusky
Medicine
Mentor: George Sandusky, Medicine

124. Cerebral Hypometabolism in Carriers of the Intron 10 +3 *MAPT* Mutation

KD Deters, SL Risacher, MR Farlow, FW Unverzagt, DA Kareken, GD Hutchins, KK Yoder, JR Murrell, S Spina, F Epperson, AJ Saykin, B Ghetti
Medicine
Mentor: Andrew Saykin, Medicine

125. Analysis of Galvanic Skin Response: Potential Relationships to Stimulus Responsivity and Brain Dopamine Signal

Evgeny Chumin, Daniel Albrecht, Karmen Yoder
Medicine
Mentor: Karmen Yoder, Medicine

126. Differences in Dopamine Function in Fibromyalgia

D.A. Albrecht, B.T. Christian, P. MacKie, K.K. Yoder
Medicine, Science, Waisman Center Brain Imaging Laboratory University of Wisconsin-Madison
Advisor: Karmen Yoder, Medicine

127. Ultrasound Imaging for Measuring the Material and Mechanical Properties of the Achilles Tendon: Inter-Day Reliability and Correlation with a Functional Calf Length Test

Natalie Kowalinski, Laura Heckroth, Stuart J Warden, Amy J Bayliss
Health and Rehabilitation Sciences

128. Indiana O'Brien Center for Advanced Microscopic Analysis

Simon Atkinson, Kenneth Dunn, Malgorzata Kamocka, Bruce Molitoris
Medicine

129. Indiana Center for Biological Microscopy

Malgorzata Kamocka, Seth Winfree, Kenneth Dunn
Medicine

130. Image Processing Techniques for Bone Cell Analysis

Wenhan Huang, Qian Enlin
Engineering and Technology
Mentors: Yokota Hiroki, Paul Salama, Engineering and Technology

131. Department of Anatomy and Cell Biology Electron Microscopy Center

In honor of the late Dr. V H Gattone, Director of the Electron Microscopy Center
Caroline A Miller
Medicine

**Faculty and Student Research
Posters and Exhibits – Session II
1:10 pm – 2:40 pm**

ARTS AND HUMANITIES

1. **Alfred Kantorowicz: Writing and Exile**
Thorsten Carstensen
Liberal Arts
2. **Mining the Indianapolis Recorder: An Exploratory Study of a Digital Humanities Dataset**
Ted Polley, Heather Coates, Jenny Johnson, Jere Odell, Kristi Palmer
University Library
3. **New Places in Old Spaces**
Kelli Cantrell, Amanda Kabat, Jason Woodruff
Liberal Arts
Mentors: Susan Hyatt, Liberal Arts; J. Drew Klacik, Public and Environmental Affairs
4. **Digital Sandbox: Playing with Public Humanities**
Callie McCune, Christine Crosby, Abby Curtin, Nick Sacco
Liberal Arts
Mentor: Jason Kelly, Liberal Arts
5. **Putting History to Work in the World: the National Council on Public History**
John Dichtl, Nicholas Sacco, Liberal Arts and the NCPH
6. **The Impact on the Ohio River Watershed by the United States Federal Government**
Lynette A. Taylor, Jason M. Kelly, Philip V. Scarpino
Liberal Arts
Mentors: Jason M. Kelly, Philip V. Scarpino, Liberal Arts

7. **Sustainable Growths: Painting with Recycled Materials**
Danielle Riede
Herron School of Art and Design
8. **Investing Public and Philanthropic Values in the Social Good of Health Care**
David M. Craig
Liberal Arts
9. **Health Matters: Reframing Design in Community Health Interventions**
Youngbok Hong, Helen Sanematsu, Lisa Cole, Terrell Zollinger
Herron School of Art and Design, IU Health, Richard M. Fairbanks School of Public Health
10. **Chronic Illness in Children and Adolescents: Research on the Impact on Their Siblings**
Elizabeth A. Richardson, Katherine M. Parker
Nursing
Mentor: Ukamaka M. Oruche, Nursing

PUBLIC AND ENVIRONMENTAL AFFAIRS

11. **The *Rivers of the Anthropocene* Literature Database and the Transmission of Environmental Concepts**
Keenan Salla
Liberal Arts
Mentors: Jason M. Kelly, Phil V. Scarpino, Liberal Arts
12. **Carbon, Oxygen, and Nitrogen Isotopic Analysis of *Mollusca: Unionidae* of the Ohio River System during the Anthropocene**
Chelsea L. Conduitt
Science
Advisor: Jason M. Kelly, Liberal Arts
Mentors: William P. Gilhooly III, Pamela Martin, Science

13. Pilot Tap Water Sampling Project to Study Urban Drinking Water Quality in Indianapolis for Community Exposure Assessment

Madhura Sundararajan, Shahid Parvez
Richard M. Fairbanks School of Public Health

Mentor: Shahid Parvez, Richard M. Fairbanks School of Public Health

14. Cuando Actuamos, Actuamos Juntos: Understanding the Intersections of Religion, Activism, and Citizenship Within the Latino Community in Indianapolis

Ryan Logan, Liberal Arts
Indiana University-Purdue University Indianapolis, The Indianapolis Congregation Action Network (IndyCAN), and the Campaign for Citizenship
Mentor: Wendy Vogt, Liberal Arts

15. Two Presidents Are Better Than One: The Case for a Bipartisan Executive Branch

David Orentlicher
Robert H. McKinney School of Law

EDUCATION, SOCIAL AND BEHAVIORAL SCIENCES

16. American Founding Son: John Bingham and the Invention of the Fourteenth Amendment

Gerard N. Magliocca
Robert H. McKinney School of Law

17. Early Identification & Intervention: Is There “Hope” for At-Risk Law Students?

Allison D. Martin, Kevin L. Rand
Robert H. McKinney School of Law, Science

18. How Human Rights Can Build Haiti: The Lawyers, the Activists, and the Grassroots Movement

Fran Quigley
Robert H. McKinney School of Law

19. Progress through Partnership: Providing Holistic Services VIA SERVICE LEARNING to Benefit Students, the University and the Community

Carrie Hagan, Stephanie Boys
Robert H. McKinney School of Law, Social Work

20. Learning at the Nano-level: Exploring the Unseen and Accounting for Complexity in How (And Why) Secondary STEM Teachers Learn

Grant Fore, Brandon Sorge, Charlie Feldhaus, Mangilal Agarwal, Kody Varahramyan
STEM Education Research Institute (SERI), Integrated Nanosystems Development Institute (INDI),
Office of the Vice Chancellor for Research, Engineering and Technology, Liberal Arts

21. Project Lead the Way: Analysis of Statewide Student Outcomes

Kirsten Robbins, Brandon Sorge, Rob Helfenbein, Charlie Feldhaus
STEM Education Research Institute (SERI), Center for Urban and Multicultural Education (CUME),
Engineering and Technology

22. Understanding the INDA Student Summer Camp Experience

Melanie Scheive, Grant Fore, Brandon Sorge
STEM Education Research Institute (SERI), Engineering and Technology, Liberal Arts

23. Impacts of School Bonding on Problem Behaviors: Ethnic differences

Carolyn Gentle-Genitty, Isaac Karikari, Jangmin Kim, Andricus Hutcherson
Social Work

24. Advocating the Well-Being of Children and Families Through a Culturally Responsive Community-University Partnership

Alycia M Elfreich, Robert J. Helfenbein
Center for Urban and Multicultural Education, Education

25. Indiana Systems of Care Expansion Planning Grant Processes

Pinkie Evans, Betty A. Walton
Social Work

26. Personality, Policies, and Partisanship: The Effect of Big Five Personality Traits on State-level Politics

Mary Ankenbruck, Aaron Dusso
Liberal Arts
Mentor: Aaron Dusso, Liberal Arts

27. Subject Perception of the Effectiveness of an Audio Slide Presentation as a Means of a Consent Review

Elizabeth Vasquez, Richard D Jackson, Sue Kelly
Dentistry
Mentor: Richard D Jackson, Dentistry

28. Rethinking Retail in Indy: Reconnecting East 10th Street, Reinventing Small Town Shopping, Reevaluating 1970s Shopping Malls, and Revitalizing Fountain Square

Katherine White, Jessica Chodor, Kendall Wolfe, Umara Khalid
Liberal Arts, Public and Environmental Affairs, Social Work, Science
Mentors: Susan Hyatt, Liberal Arts; Drew Klacik, Public and Environmental Affairs

29. Validation of the Beck Motivation Inventory in a Schizophrenia Sample

Lauren Luther, Paul M. Grant, Kerry McCole, Aaron T. Beck
Science, University of Pennsylvania
Mentor: Michelle Salyers, Science

30. Benefits of Intervention in Managing Chronic Pain

Kyle L. Benbow , Megan Miller, Eric Scott, Kurt Kroenke
Science, Medicine, Roudebush VA Medical Center
Mentors: Megan Miller, Science; Eric Scott, Medicine

31. Examining the Association of Trait vs. In-Vivo Catastrophizing and Experimental Pain Sensitivity

Macey N. Miller, Anna E. Squillace, Samantha M. Meints, Adam T. Hirsh
Science
Mentor: Adam T. Hirsh, Science

32. Predictors of Colorectal Cancer Screening Adherence among Male Veterans

Leah R. Van Antwerp, Shannon M. Christy, Catherine E. Mosher, Susan M. Rawl, David A. Haggstrom
Science, Nursing, Medicine, Richard L. Roudebush V. A. Medical Center
Mentors: Catherine E. Mosher, Shannon M. Christy, Science

BUSINESS

33. HOME Investment Partnerships Program Final Rule Online University

Meridth V. Hammer, Martin White
Engineering and Technology, Informatics and Computing

34. The Direction of Black Capitalism: A Comparative Look at the Market Disparities in African American-Owned Businesses in Indiana Relative to the Aggregate United States

Isaiah R. Horne
Liberal Arts
Mentor: Rhonda Henry Anthony, Liberal Arts

SIGNATURE CENTER INITIATIVE

- 35. Brain Rehabilitation, Advanced Imaging, and Neuroscience (BRAIN): An IUPUI Signature Center Initiative**
Flora Hammond, Andrew Saykin, James Malec, Michelle Keiski
Medicine, Rehabilitation Hospital of Indiana
- 36. Indiana Center for Breast Cancer Research**
Harikrishna Nakshatri, David Gilley, Clark Wells, Kenneth Nephew, Milan Radovich, Theresa Guise, Casey Bales, Susan Perkins, Sunil Badve, Ioan Tudor Vladislav, Kathy Miller
IU Simon Cancer Center
- 37. The Signature Center Initiative for the Cure of Glioblastoma**
Karen E. Pollok, M. Reza Saadatzadeh, Mary E. Murray, Aaron Cohen-Gadol
Medicine, Goodman Campbell Brain and Spine
- 38. IUPUI Center for HPV Research: Effects of a Brief Health Messaging Intervention on HPV Vaccine Acceptability among Parents of Adolescent Sons**
Kelly Donahue, Nathan Stupiansky, Anthony Cox, Dena Cox, Gregory Zimet
Medicine, Business
- 39. The Art of Diabetes Prevention Education in Youth**
Julie Pike, Lisa Smith, Sarah Clapp, Tamara Hannon, Laura Kester, Dustin Lynch, Courtney Kuhstoss, Helen Senamatsu
Riley Hospital at IU Health Youth Diabetes Prevention Clinic, IUPUI Center for Pediatric Obesity and Diabetes Prevention Research, Herron School of Art and Design

TECHNOLOGY, INFORMATICS AND ENGINEERING

- 40. Information Hiding Through Images**
Jose H. Miranda
Engineering and Technology
Mentor: Brian King, Engineering and Technology
- 41. A Secure and Efficient Image Transmission System for Sharing an Image with Multiple Parties**
Feng Jiang, Vinayak Tanksale, Paul Salama, Brian King
Engineering and Technology
Advisors: Paul Salama, Brian King, Engineering and Technology
- 42. Next-Generation Interaction with Ultra Large, Wall-sized Displays**
Debaleena Chattopadhyay, Said Achmiz, Davide Bolchini
Informatics and Computing
Mentor: Davide Bolchini, Informatics and Computing
- 43. Personal Information Interfaces**
Stephen Volda, Ryan Ahmed, Alex Chambers, Xinxin He, Joshua Ward
Informatics and Computing
- 44. Should I Stay or Should I Go: Two Features to Help People Stop an Exploratory Search Wisely**
Yuan Jia, Xi Niu
Informatics and Computing
Mentor: Xi Niu, Informatics and Computing
- 45. Collaborative Research Team**
Usman Chaudhary, Dhanraj Choudhary, Rushikumar Oza, Mahdi Taha
Kelley School of Business, Science
Mentor: Clayton Nicholas, Office of the Vice Chancellor for Research

- 46. Philanthropic Informatics**
Amy Volda
Informatics and Computing, Lilly Family
School of Philanthropy
- 47. Evaluating the Completeness of Data Elements of Provider Reporting on Indiana's Communicable Disease Reports**
Patrick T.S. Lai, Kavya Gujjula, Shaun Grannis, Brian Dixon
Informatics and Computing, Medicine, Regenstrief Institute
Mentor: Brian Dixon, Informatics and Computing, Regenstrief Institute
- 48. Smartphone Dependency and Consciousness: Observing Flow in the Everyday Life**
Preethi Srinivas, Anthony Faiola
Informatics and Computing
Mentor: Anthony Faiola, Informatics and Computing
- 49. Automating Provider Reporting of Communicable Disease Cases using Health Information Technology**
Brian E. Dixon, Patrick T.S. Lai, Uzay Kirbiyik, Shaun J. Grannis
Informatics and Computing, Regenstrief Institute, Department of Veterans Affairs, Veterans Health Administration, Health Services Research and Development Service, Richard M. Fairbanks School of Public Health, Medicine
- 50. Augmenting Consciousness through Invasive Technologies: How Do Cochlear Implant Patients Engage Activity in the World?**
Finch RJ, Srinivas P, Karanam Y, Koval O, Faiola A
Informatics and Computing
Mentor: Anthony Faiola, Informatics and Computing
- 51. Developing New Image Registration Techniques and 3D Displays for Neuroimaging and Neurosurgery**
Yuese Zheng, Kai-Wen Chiu, Dongcheng Jin, Sujay Chandorkar, Sarah Zajac, Emily Nicholson
Engineering and Technology, Science, Informatics and Computing
Mentors: Lauren Christopher, Engineering and Technology; Mihran Tuceryan, Science; Albert William, Informatics and Computing
- 52. Reducing Diagnostic Error in the ICU: A Novel Approach to Clinical Workflow—Visualization-Communication Integration**
Anthony Faiola, Preethi Srinivas, Yamini Karanam, Olesia Kovel
Informatics and Computing
- 53. Western Multi-blotting Device - Improve the Productivity of Protein Transfer**
Stanley Chien, Hiroki Yokota
Engineering and Technology
- 54. Phase II – Biomechanics of Smooth Muscle Cell Differentiation: Experimental Study Using an Innovative *In Vitro* Mechanical System**
Jessica Collins, Zahir Sheikh, Niraj Vipra, Joseph Yeoh
Engineering and Technology, Science
Mentors: Julie Ji, Hazim El-Mounayri, Engineering and Technology; Omar El-Mounayri, McEwen Center for Regenerative Medicine, Toronto, Ontario, Canada
- 55. Development of an Automated Mapping Tool to Transform Nursing Narrative Information into Quantifiable Nursing Data**
Mikyoung Lee, Sachin Patil, Mathew Palakal
Nursing, Science, Informatics and Computing

56. Culturally Adapted Filmed Narratives to Promote HIV Disclosure to HIV-Infected Children in Kenya

Rachel Vreeman, Winstone Nyandiko, Colin Klein, Josephine Aluoch, Thomas Inui, Irene Marete, Thomas Lewis
Medicine, Moi University, Informatics and Computing

57. Health Educational Games and Their Effectiveness Among Children

Jacqueline Hill, Joseph Defazio
Informatics and Computing
Mentor: Joseph Defazio, Informatics and Computing

58. The Electrochemical and Corrosion Behavior of Biocompatible Magnesium Alloy in Simulated Body Fluid

Jiayang Liu
Engineering and Technology

59. Polymer Composite Sensor for Detecting Low-Concentration Acetone

Ali Daneshkhah, Sudhir Shrestha, Mangilal Agarwal, Kody Varahramyan
Integrated Nanosystems Development Institute, Engineering and Technology
Mentors: Sudhir Shrestha, Mangilal Agarwal, Kody Varahramyan, Engineering and Technology

60. Study of the Thermal and Mechanical Properties of $\text{La}_2\text{Zr}_2\text{O}_7$ Using First Principle Method

Xingye Guo, James Knapp, Li Li, Yeon-Gil Jung, Jing Zhang
Engineering and Technology, Praxair Surface Technologies Inc., Changwon National University, Korea
Mentors: Yeon-Gil Jung, Changwon National University, Korea; Jing Zhang, Engineering and Technology

61. Symmetrical Components and Power Analysis for a Two-phase Micro-grid System

M. Alibeik, E. C. dos Santos Jr.
Engineering and Technology
Mentor: Euzeli dos Santos Jr., Engineering and Technology

62. AFM-Based Fabrication of Nanofluidic Device for Medical Application

Rapeepan Promyoo, Hazim El-Mounayri, Varun Kumar Karingula
Engineering and Technology
Advisor: Hazim El-Mounayri, Engineering and Technology

63. An Electrical Capacitance Tomography Based Soot Load Estimation Method for a Diesel Particulate Filter

Ragibul Huq, Sohel Anwar
Engineering and Technology
Mentor: Sohel Anwar, Engineering and Technology

64. Control of Single Switch Inverters

Shweta Hegde, Afshin Izadian
Engineering and Technology
Mentor: Afshin Izadian, Engineering and Technology

65. Towards Training the Extended Voltage Manifold Computer (EVMC) using Particle Swarm Optimization

Michael J. Bertram, Nhan Do, Lucas Gramlin, Ken Yoshida, Paul Salama, Bryce Himebaugh
Engineering and Technology, Informatics and Computing
Mentors: Ken Yoshida, Paul Salama, Engineering and Technology

PHYSICAL SCIENCES

66. α -Tocopherol is Well Designed to Protect Polyunsaturated Fatty Acids

Xiaoling Leng, Justin A. Williams, Drew Marquardt, Norbert Kučerka, John Katsaras, Jeffrey Atkinson, Thad A. Harroun, Scott E. Feller, Stephen R. Wassall
Science; Brock University, Canada; National Research Council, Canada; Oak Ridge National Laboratory;
Wabash College
Mentor: Stephen R. Wassall, Science

67. The Effect of Free Amino Acids on Fibrin Formation

Anna M. Dow, Merrell A. Johnson, Elliot D. Rosen, Bruce D. Ray, Horia I. Petrache
Science, Medicine
Mentors: Merrell A. Johnson, Horia I. Petrache, Bruce D. Ray, Science

68. Interaction of Model Lipid Vesicles with Alveolar Macrophages

Robinah K. Maasa, Matthew J. Justice, Daniela N. Petrusca, Horia I. Petrache
Science, Medicine
Mentor: Horia I. Petrache, Science

69. Ionizing Radiation Affects Epigenetic Programming in Adolescent Mice

Darryl S. Watkins, Marc Mendonca, Amy Lossie, Feng C. Zhou
Medicine, Purdue University, Science
Mentor: Feng C. Zhou, Medicine

70. Measurement of Electrostatic Forces at Submicron Scale

Qurat-ul-Ann Mirza
Physics
Mentor: Ricardo Decca, Physics

71. Synthesis and Electrochemical Characterization of Ligand-Protected Molecule-Like Silver Nanoparticles

Karl Blodgett, Meghan Teunis, Rajesh Sardar
Science
Mentor: Rajesh Sardar, Science

72. Correlations of Specific Ionic Effects using Ion Channels and Surface Charge Measurements

Torri C. Roark, Oscar Teijido Hermida, Tatiana K. Rostovtseva, Philip A. Gurnev, Horia I. Petrache, Sergey M. Bezrukov
Science, National Institutes of Health, University of Massachusetts
Advisors: Horia I. Petrache, Science; Philip A. Gurnev, University of Massachusetts; Sergey M. Bezrukov, National Institutes of Health

73. Rivers of the Anthropocene Phase 1: A Comparative Study of the Tyne and Ohio River Valleys

Aaron M. Stump, Broxton W. Bird, Jeremy Wilson
Science, Liberal Arts
Mentor: Broxton W. Bird, Science

LIFE AND HEALTH SCIENCES

74. An Inhibitor of the Mitotic Kinase, MPS1, is Selective Towards Pancreatic Cancer Cells

Ruchi Bansal, Corrine Blackburn, Lyndsey Brown, Rachel Gasaway, Jose Victorino, Jaesik Jeong, Jesse Gore, Keith L. March, Brittney-S. Herbert, Riccardo Colombo, Murray Korc, Roger B. Slee, Brenda R. Grimes
Medicine, California State University Dominguez Hills, Nerviano Medical Sciences, Italy
Advisor: Brenda R. Grimes, Medicine

75. **Analysis of the Inverse Association between Cancer and Alzheimer's Disease: Results from the Alzheimer's Disease Neuroimaging Initiative Cohort**
Kelly N.H. Nudelman, Shannon L. Risacher, John D. West, Kwangsik Nho, Vijay K. Ramanan, Brenna C. McDonald, Li Shen, Tatiana M. Foroud, Bryan P. Schneider, Andrew J. Saykin
Medicine
76. **Differential Expression of Telomere DNA in Blood content for Cancer Diagnostics**
Kevin Caruana, Hiromi Tanaka
Medicine
Mentor: Hiromi Tanaka, Medicine
77. **Comparing Virulent Breast Cancer Types in Sub-Saharan African Women and Women of African Descent**
Thomasina Watts
Liberal Arts
Mentor: Ronda Henry, Liberal Arts
78. **Somatosensory Amplification and Hot Flashes in Breast Cancer Survivors and Healthy Menopausal Women**
Christele M. Igega, Janet S. Carpenter
Nursing
Mentor: Janet S. Carpenter, Nursing
79. **Association of Diethylstilbestrol Exposure and Uterine Leiomyoma in African American Women**
Kimberly T. Ho-A-Lim
Science
Mentor: Ronda Henry Anthony, Liberal Arts
80. **Comparison of Pregnancy Health Information Needs, Barriers, and Information-seeking Behaviors Between First-time and Non-first-time Pregnant Women**
Kelli D. Johnson, Carol Shieh
Nursing
Mentor: Carol Shieh, Nursing
81. **Study of Sexual Partner Accrual Patterns Among Adolescent Women Via Generalized Additive Mixed Models**
Jaroslaw Harezlak, Fei He, J. Dennis Fortenberry
Medicine, Fairbanks School of Public Health
82. **Self-efficacy and Action Control Behavior of Nutrition and Physical Activity in a Community Sample of Adults**
Kathleen Newsome, Carol Shieh
Nursing
Mentor: Carol Shieh, Nursing
83. **Using Lexical Analysis in Schizophrenia: Can the Words Patients Use Inform Our Understanding of their Internal Experiences?**
Victoria R. MacLain, Ciara L. Spencer, Kelsey A. Bonfils, Michelle P. Salyers, Kyle S. Minor
Science
Mentor: Kyle S. Minor, Science
84. **Helping Behaviors and Recovery in Severe Mental Illness**
Ruth L. Firmin, Lauren Luther, Michelle P. Salyers
Science
85. **Outcomes of Individualized Personal Training Programs for Three Adult Siblings with Autism**
Mitch Sermersheim, Kathleen Stanton, Rachel Swinford
Physical Education Tourism Management
Mentors: Kathleen Stanton, Rachel Swinford, Physical Education Tourism Management
86. **Feasibility of 3-Step Workout for Life Program to Decrease ADL Disability in Vulnerable Elderly**
Chiung-ju Liu, Leah Y. Jones, Alyssa Gutierrez, Katie E. Lesniewski, Dan O. Clark
Health and Rehabilitation Sciences, Medicine

87. Goal Development in Parents of Children with Epilepsy and Learning Disorders

Lindsey Keener, Wendy Miller, Janice Buelow
Nursing, The Epilepsy Foundation
Mentors: Wendy Miller, Janice Buelow, Nursing

88. Do Service Dogs Improve Safety and Quality of Life in Children with Disabilities?

Jessica Wilson, Deborah Cullen
Nursing
Mentor: Deborah Cullen, Nursing

89. Spatial Distribution of Children with an ASD Enrolled in Indiana Public Schools Compared to Quality-of-Life Indicators

Jeffrey L. Ashby
Liberal Arts
Mentor: Andrew Baker, Liberal Arts

90. The Impact of Variable Dosage Using Robotic-assisted Task-Specific Upper Extremity Training in Children with Cerebral Palsy

Courtney D Mathews, Alicia R Schwipps, Ryan E Cardinal, Peter A Altenburger
Health and Rehabilitation Sciences, Neurorehabilitation and Robotics IU Health Neuroscience Center
Mentors: Peter A Altenburger, Ryan E Cardinal, Health and Rehabilitation Sciences

91. What Are the Correlations Between Muscle Strength, Motor Coordination, and Daily Function of the Upper Extremities in Older Adults?

Keishona Roby, Chiung-ju Liu, Alyssa Gutierrez
Ivy Tech Community College, Health and Rehabilitation Sciences
Mentor: Chiung-ju Liu, Health and Rehabilitation Sciences

92. Tubular Electrospun Composite Scaffolds for Potential Bone Tissue Engineering

Huseyin E. Arman, Jiliang Li
Engineering and Technology, Science
Mentor: Jiliang Li, Science

93. Increasing Bone Regeneration in Caudal Zebrafish Fin using Glycogen Synthase Kinase 3 Beta Inhibition

Jennifer L. Mahin
Science
Mentor: James A. Marrs, Science

94. Prevention of Glucocorticoid Induced-Apoptosis of Osteoblasts and Osteocytes by Protecting Against Endoplasmic Reticulum (ER) Stress

Sato A, Plotkin L, Bellido T
Medicine, Roudebush Veterans Administration Medical Center
Advisor: Teresita Bellido, Medicine

95. Mice with Conditional Knock Out of c-Mpl in Megakaryocytes Exhibit Unexpected High Platelet and Bone Mass Phenotype

Andrew Engle, Marta Alvarez, Evan Hines, Yinhua Cheng, Melissa A. Kacena
Medicine
Mentor: Melissa A. Kacena, Medicine

96. Direct Cell-To-Cell Interactions Between Osteocytes And Multiple Myeloma (MM) Cells Up-Regulate Sost And Down-Regulate OPG Expression In Osteocytes: Evidence For Osteocytic Contributions To MM-Induced Bone Disease

Delgado-Calle J, Bellido T, Roodman GD
Medicine, Roudebush Veterans Administration Medical Center
Advisors: Bellido T, Medicine; Roodman GD, Roudebush Veterans Administration Medical Center

- 97. Role of CD166 in Multiple Myeloma Cell Homing to the Bone Marrow Microenvironment and Disease Progression**
Linlin Xu, Christophe Machal, Hao Wu, Bradley Poteat, Colin Crean, Angelo A. Cardoso, John M. Chirgwin, Helmut Hanenberg, Khalid S. Mohammad, Attaya Suvannasankha, Edward F. Srouer
Medicine, Richard L. Roudebush Veterans' Administration Hospital
Advisor: Edward Srouer
- 98. Comparison of Macrolide Use in Hospitalized Children with Community Acquired Pneumonia (CAP) Before and After the Publication of Clinical Practice Guidelines**
Maheshwor Kafle, Laurie Wilkie, Tom Coffelt, James Salven
Medicine, Riley Children's Hospital
- 99. The Effect of Retinoids on the Regenerating Axolotl Spinal Cord**
Maia P. Kirk, Ellen A.G. Chernoff
Science
Mentor: Ellen A.G. Chernoff, Science
- 100. Epigenetic Regulation of Astrocyte Differentiation in the Developing Murine Brain**
Sadhna Rao, Jonathan M. Wilson, Zhiping Wang, Yunlong Liu, Teri Belecky-Adams
Science, Medicine
Mentors: Teri Belecky-Adams, David L. Stocum, David Skalnik, Science
- 101. Role of TGF- β Activated Kinase 1(TAK1) in Chick Retinal Development**
Vagisha Ravi, Teri Belecky-Adams
Science
Mentor: Teri Belecky-Adams, Science
- 102. Insulin Direct Pancreatic Progenitor Cell Differentiation via Pdx1 Regulation**
Lihua Ye, Morgan Roberson, Ryan M. Anderson
Medicine
Mentor: Ryan M. Anderson, Medicine
- 103. A Compendium of Kidney Specific Regulatory Network in Mouse Uncovers Functional, Evolutionary and Disease Dynamics**
Seyedsasan Hashemikhabir, Rajneesh Srivastava, Sarath Chandra Janga
Informatics and Computing, Medicine
Mentor: Sarath Chandra Janga, Informatics and Computing
- 104. Wnt Signaling in Zebrafish: GSKB3 β Inhibitor Effect on Cell Proliferation**
Angelica Brannick, Jennifer L. Mahin, Mark Farrel, Courtney Curtis, Swapnalee Sarmah, Kayla Collins, Shaoyou Chu, Mas Sato, Manuel Sanchez-Felix, James A. Marrs
Science, Lilly Research Labs
Mentors: Jennifer L. Mahin, James A. Marrs, Science
- 105. Study of Fulvic Acid: A Natural Dietary Supplement**
Ghayasul I Syed, Richard L. Gregory, L. Jack Windsor, Fengyu Song
Science, Dentistry, Dentistry/Medicine
Mentor: Richard L. Gregory, Dentistry/Medicine; L. Jack Windsor, Fengyu Song, Dentistry
- 106. Modulating NK-mediated Immunity by Lunakine**
Hua-Chen Chang, Chun-Yu Tung, David Lewis, Ling Han, Mythily Srinivasan, Michael J. Robertson, Wu-Kuang "WK" Yeh
Science, Dentistry, Medicine, Immune Peptide Therapeutics (IPT), LLC

107. Abundance of Secondary Metabolites in Human Microbiome

Vishal Sarsani, Nikhil Kulkarni, Sarath Chandra Janga
Informatics and Computing, Case Western Reserve University, Medicine
Mentor: Sarath Chandra Janga, Informatics and Computing

108. Orexinergic Neurotransmission in Temperature Responses to Amphetamines

Abolhassan Behrouzvaziri, Daniel Fu, Patrick Tan, Maria Zaretskaia, Daniel Rusyniak, Dmitry Zaretsky, Yaroslav Molkov
Science, Park Tudor School, Carmel High School, Medicine
Mentor: Yaroslav Molkov, Science

109. Effect of Nicotine on Planktonic and Biofilm Growth Phases of an Experiment

Vinayak Gupta, Richard L. Gregory
Science, Dentistry/Medicine
Advisor: Richard L. Gregory, Dentistry/Medicine

110. Effects of Tobacco Components on *Streptococcus mutans* and the Role of *S. mutans* in Apoptotic Cell Death through Macrophage Interactions

Ana Cavazos, Ghada Batarseh, L. Jack Windsor, Richard L. Gregory
Dentistry, Dentistry/Medicine
Mentors: L. Jack Windsor, Dentistry; Richard L. Gregory, Dentistry/Medicine

111. Determining the Effects of Fulvic Acid on Biofilm/Planktonic *Streptococcus Mutans* Growth

Mark Botros, Richard L. Gregory
Science, Dentistry/Medicine
Mentor: Richard L. Gregory, Dentistry/Medicine

112. Evaluating the Effect of Fulvic Acid on Oral Bacteria and Cancerous Oral Cells

Phillip Witcher, Richard L. Gregory, L. Jack Windsor
Science, Dentistry, Medicine
Mentors: Richard L. Gregory, Dentistry/Medicine; L. Jack Windsor, Dentistry

113. Determining the Minimum Inhibitory Concentration of Fulvic Acid on Early *Streptococcus mutans* Biofilm Formation

Ali Tahir, Phillip Witcher, Richard L. Gregory
Science, Dentistry/Medicine
Mentor: Richard L. Gregory, Dentistry/Medicine

114. Expanding Access to Dental Care through Dental Hygienists

Hannah Maxey, Heather Taylor
Dentistry
Mentor: Cynthia Stone, Dentistry

115. The Effects of Fulvic Acid on Established *Streptococcus mutans* Biofilm Formation and Human Gingival Fibroblast Cells

Emily Parker, Richard L. Gregory, L. Jack Windsor, Branko Alavanja
Science, Dentistry, Dentistry/Medicine
Mentors: L. Jack Windsor, Dentistry; Richard L. Gregory, Dentistry/Medicine

116. Ethanol Exposure Produces Defects in Gene Expression During Zygotic Genome Activation Stage Zebrafish Embryos, Which Can Be Rescued By Folic Acid

Saratalai Tinubu, Jessica Howard, Alex Farris, Rajneesh Srivastava, Sarath Janga, Jeanette McClintick, Howard Edenberg, Swapnalee Sarmah, James Marrs
Science, Informatics and Computing, Medicine
Mentor: James Marrs, Science

117. Sex Differences in Anxiety-like Behavior on the Elevated-Plus Maze During Withdrawal From Periods of Binge Alcohol Drinking in C57BL/6J Mice

Megan Runkel, Jordan A. Masopust,
Laverne C. Melón, Stephen L. Boehm, II
Science
Mentor: Stephen L. Boehm, II, Science

118. Effects of the Selective PDE4B Inhibitor TDP-003 on Ethanol Consumption

Jessica Lee Despard, Nicholas Grahame,
Meredith Halcomb
Science
Mentor: Nicholas Grahame, Science

119. Development of Cross-Tolerance Between Ethanol and Baclofen in C57BL/6J Mice

Shelby N. Blasingame, Chelsea R. Kasten,
Stephen L. Boehm
Science
Mentors: Chelsea R. Kasten, Stephen L. Boehm, Science

120. DNA/RNA Degradation Rate in Fixed Tissue

Shannon Cook, Chelsea Dodge, Randy Morgan, George E Sandusky
Medicine
Mentors: Randy Morgan, George Sandusky, Medicine

121. Using Amino Acid Derivatives to Inhibit *Pseudomonas aeruginosa* Biofilm Formation on Cystic Fibrosis Bronchial Epithelia Cells

Jonathan LaCombe, Gregory G. Anderson,
Kathleen Marrs
Science
Mentors: Gregory G. Anderson, Kathleen Marrs, Science

122. Dissecting the Function, Evolution and Disease Associations of an Atlas of Human RNA Binding Proteins

Yaseswini Neelamraju, Seyedsasan Hashemikhabir, Sarath Chandra Janga
Informatics and Computing, Medicine

IMAGING

123. IUPUI Imaging Research Initiative

Mark Holland
Medicine

124. Three-Dimensional Analyses of Craniofacial and Nasopharyngeal Phenotypes in Ts65Dn Down Syndrome Mice Treated with EGCG, a Dyrk1a Inhibitor

J. Starbuck, E. Harrington, K. Kula, A. Ghoneima, R. Roper
Dentistry, Science

125. Indiana Institute for Biomedical Imaging Sciences

Courtney Robbins
Medicine

126. Evaluation of a Hybrid Iterative Reconstruction Technique "iDose" for CT Dose Reduction and Image Quality

Yun Liang
Medicine

127. The Monetary Impact of Outpatient No-Shows in the Nuclear Medicine Department of a Pediatric Hospital

Michele L Moore
Medicine
Mentor: Jennifer Lomax, Riley Children's Hospital

128. Reliability and Validity of the OrthoMechanics Sequential Analyzer

A. Ghoneima, S. Talaat, A. Kaboudan, K. Kula
Dentistry, Future University, Shorouk Academy

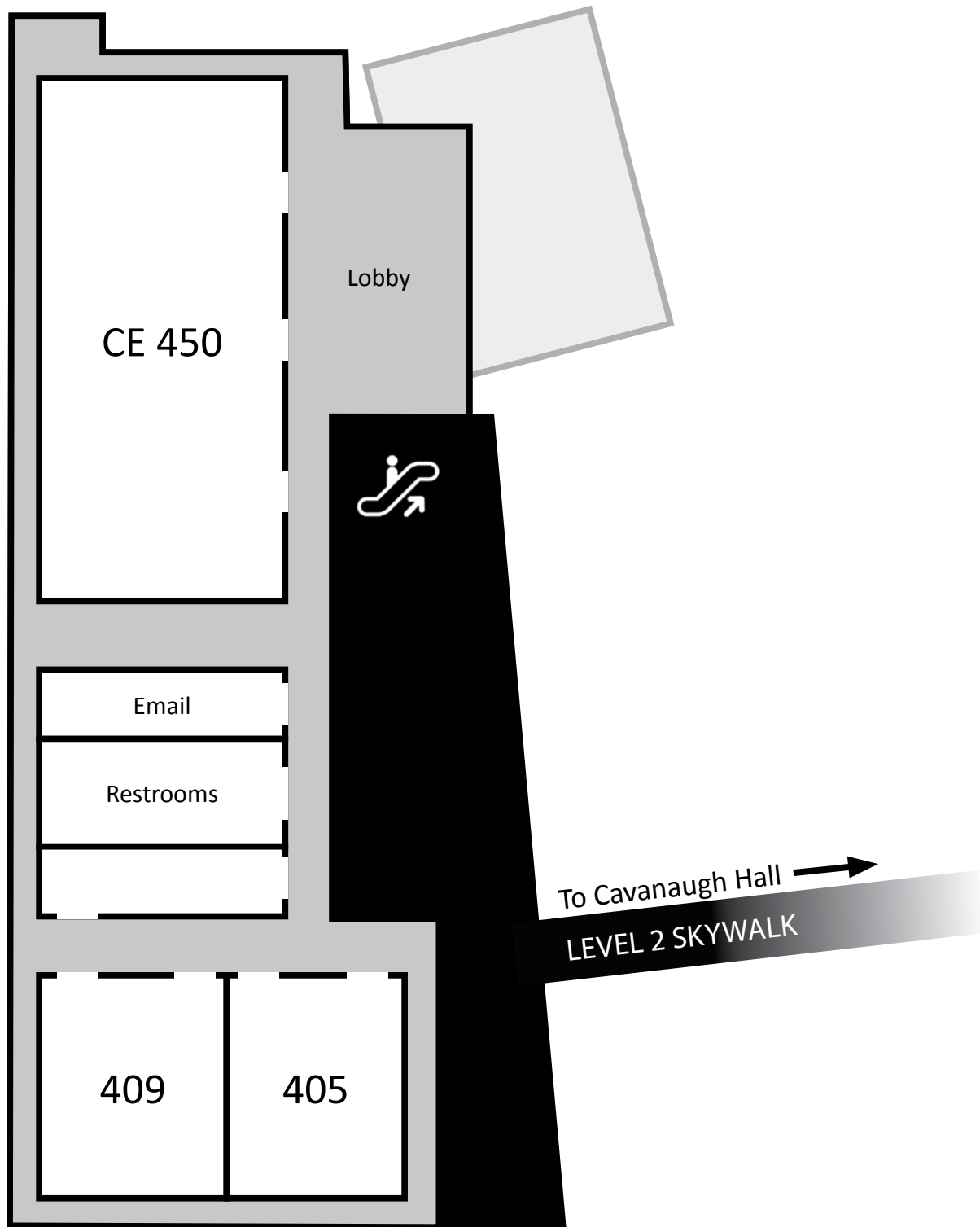
129. The Effect of Environmental Conditions on Optically Stimulated Luminescent Dosimeters

Devin Ryan
Medicine
Mentor: Trent Mays, Medicine

IUPUI CAMPUS CENTER

Research Day Facilities

4th Floor, 11:10am - 2:40pm



JagTalks Presenters

1:00 PM – 2:30 PM, Campus Center Room 405



Dr. Robin Hughes

Associate Professor of Higher Education and Students Affairs, School of Education

JagTalks Topic: Deconstructing ballin': Sporting participation in education

Dr. Hughes will discuss her research on student athletes and how they are constructed in educational and in social spaces. She will provide specific thoughts about the ways in which the Black athlete is socially constructed and how those constructions impact their collegiate experiences. Myths regarding athletes and socialization will also be discussed.

Dr. David G. Marrero

J.O. Ritchey Endowed Professor of Medicine, School of Medicine

JagTalks Topic: Translating Diabetes to Public Health

Dr. Marrero will discuss how translational research into diabetes identification and management has shown that improving risk factors depends upon tailoring disease management programs to specific populations to better address health disparities. He will explain a practical application of this work and the novel approach he and his colleagues have developed that explains the risks of cardiovascular disease and then provide education on strategies to reduce those risks. Dr. Marrero will also share how innovative intervention programs are successfully being implemented in local community organizations.



Dr. Khadija Khaja

Associate Professor, School of Social Work

Faculty Fellow for the Common Theme Project Find Your Voice, Hear My Voice

JagTalks Topic: Social Service Needs of Muslim Communities

Dr. Khaja will provide a brief snapshot of her passion for international research. She will also share some of the important findings of her study on the Social Service Needs of Muslims Living in Ontario, Canada. This qualitative research study explored the growing needs of Muslim youth, women, men and elderly populations.

Dr. Sheila Suess Kennedy

Professor, Law and Public Policy, School of Public and Environmental Affairs

JagTalks Topic: Researching Our Civic Deficit

Dr. Kennedy will discuss elements of her current research, which focuses on the personal, political and civic consequences of our “civic deficit,” and the reasons it persists. She will share how she hopes to increase understanding of the dimensions of the existing civic deficit and the effect of that deficit upon personal efficacy, civil liberties and democratic engagement.



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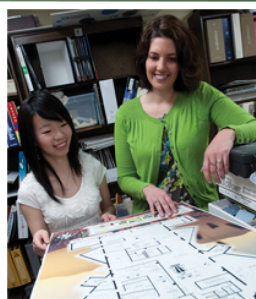
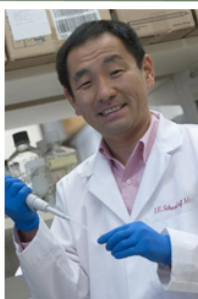
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